THE MARINE RECORD

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NEW RULES SUGGESTED.

Amendments and changes in rules governing navigation in St. Mary's River, recommended by Captain A. B. Davis, U. S. Revenue Marine:

Amend Rule 1 to read:

No vessel ascending or descending the St. Mary's River shalll proceed at a greater speed than nine miles an hour over the ground between the following named points, to-wit: Everen's Point and the Northern Flat Lights of the Twenty Foot Channel in Hay Lake leading from Neebish Channel and between the Crib Light at the Southern entrance of the Upper Twenty Foot and Little Rapids Channels and the Government Piers at Sault Ste. Marie, and between the Western end of the Sault Ste. Marie Canal Piers and Big Point.

Strike out Rules 2 and 3.

In place thereof insert the following rule: No steamer or vessel shall approach another steamer or vessel moving in the same direction nearer than one-quarter of a mile between the points named in Rule 1; but a steamer without a tow may pass with a tow moving in the same direction between the following points, to-wit: the northern end of Dark Hole and Black Buoy No. 29 in Little Mud Lake, and between the Crib Light at the Northern entrance of Little Rapid Channel and the Government Piers at Sault Ste. Marie.

ANCHORAGE.

Amend Rule 11 to read:

No vessel or raft shall anchor in any of the improved channels or abreast of the Government Piers at Sault Ste. Marie, except in distress or during fog, and any vessel so anchored must always shift her anchorage when directed by the officer in charge of a patrolling vessel to the spot designated by such officer.

Add a rule to exempt all vessels one hundred tons or less from the provisions contained in the rules relative to vessels moving in the same direction.

NOTICE TO MARINERS.

United States of America—Northern Lakes and Rivers—New York.

St. Joseph Pierhead Light Station.—Notice is hereby given that, on or about February 1, 1897, there will be established at this station, on the north pier at the entrance to St. Joseph Harbor, east side of Lake Michigan, a 10-inch steam whistle, to sound, during thick or foggy weather, blasts of 3 seconds' duration separated by silent intervals of 17 seconds, thus: Blast, 3 seconds; silent interval, 17 seconds; blast, 3 seconds; silent interval, 17 seconds. The fog signal is a brown corrugated iron structure and stands immediately in rear of the light tower on the pierhead. On the same date the fog bell heretofore sounded at this station during thick or foggy weather will be discontinued.

Treasury Department, office of the Light-House Board, Washington, D. C., January 15, 1897.—Tibbetts Point Light Station. Notice is hereby given that, on the opening of navigation, 1897, a 10-inch steam whistle will be established at this station, on Tibbetts Point, south side of the head of the St. Lawrence River, to sound during thick or foggy weather blasts of 3 seconds duration, separated by silent intervals of 87 seconds, thus: Blast, 3 seconds; silent interval, 87 seconds; blast, 3 seconds; silent interval, 87 seconds. The fog signal building is situated about 25 feet westerly from the light tower and within from 36 feet to 78 feet of the shore line on the southerly and westerly sides.

Frankfort Pierhead Range Rear Light Station. Notice is hereby given that, on or about January 22, 1897, a fixed red lens-lantern light will be established on the south pier at the harbor of Frankfort, east side of Lake Michigan, to form a range with the present pierhead light for entering the harbor. The light will be shown from a post at a height of 50 feet above the mean lake level and will illuminate 270° of the horizon. The post is painted white, and is located about 600 feet E. ⅜ S., in rear of the present pierhead light.

By order of the Light-House Board:

JOHN G. WALKER,
Rear Admiral, U. S. Navy, Chairman.

PIER CONSTRUCTION.

The bids for extending Milwaukee habor piers were opened at Milwaukee on Saturday, Knapp & Gillen, of Racine, being the lowest bidders. The abstract of bids are as follows: Chicago Star Construction and Dredging Co., Chicago, $158,112; McArthur Bros. Co., Chicago, $158,208.50; Carkin, Stickney & Cram, Detroit, $154,036.75; Hausler & Lutz Towing and Dock Co., Chicago, $159,285; Adolph Green and W. B. Anderson, Green Bay, $168,576; Knapp & Gillen, Racine, $149,770; William A. Starke, Milwaukee, $171,874; Joseph Wolter, Sheboygan, $164,995.

WATER-TUBE BOILERS ON CRUISERS.

The first British warship fitted with water-tube boilers has made her preliminary cruise with gratifying results. The cruiser is said to be the largest of its kind afloat, and the speed made on her trial was second only to that of the two new Cunarders. The first test covering thirty knots of steaming at 5,000 indicated horse power, using four and a half tons of coal per hour, developed a speed of 14.34 knots. The second test, with 18,000 horse power and a consumption of fifteen tons of coal per hour, resulted in 21 knots per hour. The third and final test covering eight hours of steaming, with 26,000 indicated horse power, under natural draft, developed a speed of 22 1-2 knots. The water-tube boiler in this instance is reported to have surprised its friends. Moreover, as this modern cruiser has no side armor, it is essential to safety in action, that speed should make up for a comparatively defenceless condition.

THE AMERICAN LINER ST. PAUL.

A paragraph has gone the rounds to the effect that the American built liner St. Paul has to be riveted again by Clyde workmen below a certain line, because the liner's powerful engines have strained the hull and that it is probable the sister ship the St. Louis will have to be similarly treated. The paragraph is amusing in its assumption; but unfortunately its wide circulation might injure the American Line, and we therefore give the facts. Certain plates and rivets in the bottom of the ship were strained when she ran ashore opposite Long Branch, about a year ago. They are to be removed and replaced. This is the most opportune time of the year, Southampton dock the most convenient, and the American Line preferred to have the experienced workmen of the Clydebank Co., with whom they have always continued on such friendly terms. There is not the slightest ground for the suggestion that the engines have strained the ship or that the St. Louis is to be similarly treated.—Engineering.

IN THE INTEREST OF LABOR.

The Corliss act, which has already passed the House, reads as follows:

"That from and after the passage of this act all persons employed by the United States, or any contractor or subcontractor doing work for the United States in any state, territory, or the District of Columbia, must be full citizens of the United States."

So mere first papers, or a declaration of intention to become a citizen, will not qualify a man to work for a contractor engaged in performing government work. The act is to take effect immediately.

ALUMINUM FOR WAR VESSELS.

At the Prussian naval yard at Wilhelmshaven, says a foreign exchange, very extensive and thorough experiments have been made to ascertain how far aluminum can be utilized in the construction of war vessels, and it was found that aluminum in its pure state cannot be used at all or but very little for this purpose, but that aluminum bronze, as well as an alloy of 94 to 96 parts of aluminum and 6 to 4 parts of copper, may be employed to good advantage in naval construction, at least for certain purposes. Then again, aluminum bronze was proved to be not servicable for bearings, valves, valve cases, spouts; but aluminum proved very satisfactory for sideboards, ammunition boxes, tool boxes, cupboards, washtands, etc. In the latest vessels the carriages of the dynamo engines are constructed of aluminum. The experiences had with aluminum for above purposes were so favorable that all the new torpedo boats are being provided with such utensils made of aluminum. It is rather peculiar in view of this fact that the experiments with aluminum furniture made last October on the cruiser "Geier" did not result as satisfactorily. The trial included one writing desk, one bedstead, one wardrobe, and one chair; several window frames and ventilators were also constructed of aluminum. The furniture bent too easily, and the aluminum parts required a frequent renewal of painting. As altogether excluded appears the utilization of aluminum sheets for the hulls of vessels. It is true that very light aluminum boats have been plying on rivers for years. But in the test referred to it showed so little resistance to salt water that its utilization in this direction had to be abandoned altogether. Yet it may be that 10 per cent. aluminub bronze which nearly equals cast steel, besides being more weather proof, may crowd out the latter some day when the now much dearer aluminum will have approached more closely the price of steel.

M. E. B. A.

The following officers of the Marine Engineers' Beneficial Association, No. 59 post, of Boston, Mass., were elected for the ensuing year and were installed January 4, 1897: Robert McMurry, past president, chief engineer Commercial Towboat Co., Boston.; Hosia Harden, president, inspector Hartford Steam Boiler Inspection Co., Boston; Geo. A. Nichols, financial secretary, Atlantic Works, East Boston, Mass.; J. F. Cook, corresponding secretary, first assistant engineer Cape Ann steamer; W. M. Miller, treasurer, harbor police boat; D. P. McGunnigle, recording secretary, United States revenue boat, Boston, Mass.; M. O'Brien, conductor, tug Blanche, Boston, Mass.; M. Morris, doorkeeper. Trustee—M. O'Brien, tugboat Blanche.

Marine Engineers' Beneficial Association, No. 48, Sandusky, O., has elected the following officers for 1897: President, W. F. Clark; ice president, Pat Ragen; treasurer, W. F. Mayer; financial secretary, C. V. Hart; corresponding secretary, John Ewing, 1510 Monroe St.; recording secretary, John Ewing; conductor, Geo. Moor; chaplain, H. Burkley; door-keeper, Nels. Lockhart; outside door-keeper, J. Bemkhart. Trustees—J. Gaa, Geo. Zanger, W. F. Mayer.

Ship Masters' Association, Bay City Lodge No. 5, has elected the following officers for 1897: President, C. F. Brown; first vice president, Jos. G. Sauer; second vice president, Wm. E. Peirce; treasurer, Henry Bennett; secretary, Thos. Chron; warden, John Stone; marshal, C. M. Saph; sentinel, James Owen; chaplain, Wm. Barrett.

The Seattle lodge of the Marine Engineers' Beneficial Association elected the following officers for 1897:

President, R. A. Turner; vice president, Fred B. Casper; treasurer, J. A. Snyder; secretary, T. H. Compton; chaplain, Erskin Thomas; conductor, J. J. Smith; D. K., Geo. L. Colman.

NEWS AROUND THE LAKES.

CHICAGO.

pecial Correspondence of Marine Record.

There is no change in grain freights since my report ıst week.

J. G. Keith & Co. chartered the barge Celtic for corn) Kingston at 4 cents.

The Independent Tug Line towed the barge Celtic to ıe Union Elevator to load grain.

The Chicago Shipbuilding Co. will launch the new eel steamer Crescent City on the 2nd of February.

C. W. Elphicke & Co. chartered the steamer D. C. Vhitney and barge Wayne for corn to Kingston at 4 ents.

The Petoskey had to come here from Milwaukee to ceive a sheriff's wheel in place of the one broken at Muskegon. Milwaukee dry docks are more than busy ese times.

Richard Powers, formerly president of the Seamen's nion, has been appointed vessel despatcher at this port. apt. Weckler has resigned his position and been appoint- l deputy coroner of this city.

Captains John Jenks and J. O. Wood will go to Vashington Saturday to attend the Grand Convention the American Masters and Pilots' Association, as rep- sentatives of Harbor 33, Chicago.

Captains F. Loftus, J. H. Gallagher and Joseph Jax left re Monday for Washington, to attend the Grand Con- ntion of Shipmasters, as representatives of Lodge 3, hicago, of the Shipmasters' Association.

The Dunham Towing & Wrecking Co. towed the hooner Jas. G. Blaine to the St. Paul elevator, the rge Wayne to the City elevator, the steamer D. C. Whit- y to the Neeley elevator, to load grain.

At Miller Brothers' shipyard the steamer Petoskey was dock for a new wheel and some calking; the steam canal)at Novelty was in dock and had her bottom re-calked; e canal boat Polaris received considerable new out- de planking.

The annual meeting of the Dry Dock Association of e Lakes, was called to order Wednesday morning in e Auditorium. Successors will be elected to the present ficers, and a beautiful solitaire diamond stud will be esented to Hamilton J. Mills, as the Association's ap- eciation of the good work he has done while fulfilling e duties of his office during the past year.

The new iron rolling lift bridge at North Halsted street s been opened for the passage over of pedestrians. It a very fine structure and will, when open, give a very de draw for vessels to pass through. The inventor is m. Scherzer, C. E. Builders of superstructure, the ing Bridge Co., of Cleveland. Builders of sub-super- ucture, Wilson & Jackson. Builders of machinery and ctrical machinery, the Vulcan Iron Works, Chicago.

A festive wedding party assembled at Captain James Calbick's residence, 890 Kedzie Avenue, on Monday ening, January 18, to celebrate the marriage of Clara, s eldest daughter, to William H. Wood, well known in arine circles. The marriage was held at the bride's rents' residence and the service was conducted by the v. Dr. Morrison, of the Episcopal church of the Ephip- y. A large number of guests were present and a very joyable evening was spent. The wedding presents were merous, handsome and useful. The happy bride and idegroom will go East to spend their honeymoon.

The Independent Tug Line are giving their tug Craw- d a thorough rebuild in their floating dry dock. They e about to have built by James Davidson, West Bay ty, a new tug of the following dimensions: 80 feet over , 20 feet beam, 11 feet depth of hold. She will be sup- ed with double high pressure engines, with cylinders x22 inches each; boiler 7 1-2 by 13 feet, to be allowed pressure of 160 lbs. The tug will be used for towing Chicago river. Her beam may be considered more than ordinary size for a boat of her length, but her owners of the opinion that it will greatly add to her hanging power when working in the draws of bridges or when aking a bend in the river.

BUFFALO.

ecial Correspondence to Marine Record.

A survey has been held on the steamer Topeka by Capt. orge McLeod and Capt. B. F. Bruce. The Topeka is at Oswego. The surveyors report that the vessel's cargo of barley is damaged to the extent of 3,080 bushels, caused by the bursting of a water pipe.

The Western Transit liner Montana dry docked this week for a general overhauling.

S. D. Caldwell, general manager of the Western Transit Co. for the past thirteen years, has resigned from that position on account of ill health.

The Thomas Maythorn, holding a cargo of corn for winter storage grounded through shoal water. It is not expected that any damage has been done to her.

The action of the Lake Carriers' Association in again awarding the contract for handling grain at this port to Kennedy, despite the fact that Capt. Killeran submitted a lower bid, has caused considerable comment in certain local shipping circles.

Frank E. Kirby, the marine architect of Detroit, has begun suit in the United States court at Pittsburg to recover $6,000 due him from the Pittsburg, Shenango & Lake Erie railroad, for designing the plans for the car ferries Shenangos Nos. 1 and 2.

The schooner C. L. Young, ashore on Horse Shoe Reef for so long, was released on Sunday night and towed here. She had about 80,000 feet of lumber aboard and after discharging this she will no doubt be rebuilt. The cargo was insured, but there was nothing on the hull.

Secretary of War Lamont has awarded the contract for the Stony Point extension of the Buffalo breakwater to Hughes Bros. & Bangs, of Syracuse, at their bid of $1,765,460. Work will be commenced as soon as ice permits in the spring. The necessary machinery will reach Buffalo during February and March.

Grain dealers are feeling sore over the refusal of the railroad authorities to continue ex-lake grain on the through rate as they do the flour. They have cut off the rate as usual at the beginning of the year and are charging 11 cents per 100 from Buffalo to New York. This is 2 cents over the through rate and is practically prohibitory.

At a recent meeting of dredge owners and contractors held at Indianapolis there was quite a feeling expressed that some understanding should be arrived at to prevent such severe rate cutting as has been going on lately. The entire number of dredges on the lakes is placed at a valuation of $4,000,000, and it is said that the severe competition does not leave adequate earnings for so large an investment. It is, however, very questionable whether any combination of interests can be brought about.

The owners of canal boats are very much exercised this week over the bill now pending at Albany in the state legislature to admit of a larger incorporation than $50,000 doing business on the state canals. They say, "With the law as it is, prohibiting the capitalization of companies for an amount over $50,000, canal traffic can be kept in the hands of the smaller owners and we all have chances alike, thus bringing in enough competition to keep freights low." On the other hand, the new company will incorporate under the laws of an adjoining state if the present law is not repealed.

CLEVELAND.

Special Correspondence of Marine Record.

Mrs. Storer, wife of Captain J. H. Storer, of the steamer Colonial, died on Monday. She accompanied her husband to Detroit and was taken sick there.

Capt. J. R. Sinclair, superintendent and secretary of the Dunham Towing and Wrecking Co., Chicago, is spending a day or two here this week, renewing old friendships and making new acquaintances. He will leave for Buffalo towards the end of the week, presumably in the interests of the Dunham Towing and Wrecking Co.

Drake, Bates & Co. is the name of a new firm that will be in the ore shipping business next season. The firm, which is composed of M. M. Drake of Buffalo and F. A. Bates and J. H. Bartow, will handle the Hall and Cincinnati mines. The genial Capt. Bartow, who is an old vessel broker, is well and favorably known along the lakes.

The Cleveland-Cliffs Iron Co. has contracted with the Detroit Drydock Co. to compound the engines of the Kaliyuga, now laid up at this port. The cylinders will be 22 and 46 by 45 inches. The company will build for her a cylindrical steel boiler 12 1-2 by 12 feet, to carry 130 pounds of steam. She will also be fitted with the Howden hot draft. The steamer will go to Detroit as soon as she can do it in the spring to be fitted with her new machinery.

Incorporation papers were issued this week by the Secretary of State for the Gilchrist Transportation Company, of Vermillion. The capital stock of the new company is $1,000,000. The incorporators are J. C. Gilchrist, A. J. Gilchrist, F. W. Gilchrist, C. P. Gilchrist, R. Scheuck, and W. H. Gilchrist. The step has been expected for some time. The Gilchrists are following the course taken by many other vesselmen.

Capt. Geo. Tebo, representing the O. S. Richardson Fueling Co. of Chicago spent Wednesday afternoon in the city visiting vessel owners, masters and others interested in marine affairs. Capt. George is well and favorably known, always a welcome guest, and his recent connection with the O. S. Richardson Co. will surely redound to his advantage. Capt. Tebo left in the evening for Washington to attend the meetings of marine men in session there this week.

Revenue officials inspected the Walter Q. Gresham at the shipyard of the Globe Iron Works Company on Tuesday. A few minor details will be completed before the vessel is accepted by the government. The usual formality is an inspection which is followed by a report to the Treasury Department. If satisfactory the vessel is then formally turned over to the government after the report is received.

The steamer W. L. Wetmore and consort Brunette, which were anchored under the west arm of the breakwater for the winter, were driven ashore in the blow Sunday night, through insufficient moorings. The boats are in a sheltered position on a sandy bottom and will probably suffer no damage. The old schooner H. P. Baldwin, up at the west end of the breakwater, did not drag her anchors.

So it appears that the Cleveland Shipbuilding Co. will move to Lorain after all; however, the Detroit Dry-Dock Co. have their iron shipbuilding yard at Wyandotte, dry docks at Springwells and general offices with dry docks, engine works and wooden shipbuilding plant in Detroit. So also is the Chicago Shipbuilding Co. situated with their splendid plant at South Chicago and general offices in the city. The Cleveland Shipbuilding Co. have not had, nor could they obtain, room to expand, and they have done exceedingly well in securing a valuable option at a near-by port. At the same time, this port will of necessity be their headquarters and the at present limited capacity be kept running to its full extent.

"Resistance of Ships and Other Floating Bodies at Deep and Shallow Drafts of Water," by Joseph R. Oldham, N. A., M. E. The above is the title of a paper to be read before the Society of Civil Engineers of Cleveland, O., on January 26th, next. The following subjects will be treated of or touched upon: Shallow Draft Yachts; Water Pressure in the Deep Oceans; Resistance of Fishes or Fish-Torpedoes; Friction in a Perfect Fluid; Friction of Solid Bodies; Screw and Side-Wheel Engine Friction; Resistance of a Plane Passing Through Water; Speed of Torpedo Boats and Deep Draft Steamers. The meeting will be held at the Case Library.

It is now learned that a contract has been closed with the McMyler Manufacturing Co. for a side coal car dumping machine, to be erected on the property of the Cleveland Terminal & Valley Railway Co., at the foot of Seneca street. The plant will be operated by the Pittsburg & Chicago Gas Coal Co., but will be used by other shippers from this port. It is expected that the new machine, which is a duplicate of the one worked by the Cuddy-Mullen Co., in the outer harbor, will be in operation in May. This machine will give Cleveland four fast plants for loading coal, and the greatest facilities for handling soft coal on the lakes, which will increase shipments from this port materially. There will be twelve car dumping machines in operation at Ohio ports next season. Cleveland will lead with four; Toledo two, Huron, Lorain, Fairport and Conneaut one each, and Ashtabula two.

Capt. Joe Doville bought the barge Lone Star at marshal's sale last week for $139.

The two large wooden tow barges recently added to the Minch fleet, Dundee and Aberdeen, formerly owned and built by Capt. James Davidson, are said to have been purchased for $40,000 each.

A claim has been made by the Globe Iron Works Co. for extra material and work put on the revenue cutter Gresham in accordance with their own and the sug-

gestions of the government officers, whereby the Gresham was made better than any revenue cutter afloat. The company was not bound to do this work, but a desire to turn out a boat satisfactory to themselves and one such as the government thought it ought to have, caused the changes to be made, after the original specifications had been made out.

FLOTSAM, JETSAM AND LAGAN.

Duncan Armstrong of Port Dalhousie, Ont., is having a tug built at that place.

A new mainmast, several new deckbeams, and some new deck have been put in the steamer Mecosta at Chicago.

Considerable repair work is reported from Chicago on the steamers City of Paris, Merida and John Mitchell.

The Owen steamers Parks Foster and Ira H. Owen will be managed by P. H. Fleming of Chicago next season.

The Chicago Shipbuilding Co. has caused the canalboat Adele Shaw to be libeled at Tonowanda on a claim of $1,608.35.

At Port Huron the wrecked schooner A. J. McBrier was sold under the United States marshal's hammer to C. D. Thompson for $425.

Capt. Charles Ludwig of Port Huron has purchased interests in the steamer Ed. J. Kendall and barge Montgomery at the rate of $5,000 for the whole.

Capt. Calvin Carr has become associated with C. W. Elphicke at Chicago in the vessel brokerage and insurance business, taking the place of Amasa Fitch.

The Grand Trunk Railway Co. will repair and fit out the carferry Huron, formerly used at Port Huron, and take her to Detroit to be used in ferrying between Detroit and Windsor.

On Wednesday next, Jan. 20, the schooner D. S. Austin, now lying at Sturgeon Bay, will be sold under the hammer by Marshal Pratt in the United States court room at Milwaukee.

The work of deepening the harbor at Erie in the interest of the Pennsylvania Railroad Co. is just completed. This adds a large amount of available frontage to the company's plant.

Capt. George Robertson, late of the steamer Alice M. Gill, is now first mate of the steamer Nyack in place of Capt. John Hough, who has turned his attention to bossing stevedores at Grand Haven.

Capt. James Davidson of West Bay City will build for the Barry Bros., of Chicago, a tug 80 feet long, with 20 feet beam and 11 1-2 feet hold. A second-hand 18x22 engine is to be placed in the tub, but steam will be furnished by a new boiler of 160 pounds working pressure.

The steamer Elsa, of Sandusky, bound from New Orleans for Bocos del Toro, Colombia, struck on the Colorado reefs, off the western extremity of Cuba, on Jan. 7, and became a total wreck. All hands were saved. The Elsa was a vessel of thirty-four tons. She was 61 feet long, 16 feet beam and 6 feet deep. She was built in Sandusky in 1895.

The underwriters have settled the losses on the Canadian steamer Acadia, which went ashore on Lake Superior last fall. The adjusted loss was $18,750 on the hull and $19,000 on the cargo. The owners of the steamer, A. E. & R. O. McKay, of St. Catherines, are reported to be negotiating with Capt. James Davidson for one of the new canal size steamers which he is building this winter. The good record made through the Welland last season by such steamers as the Aragon and Katahdin has turned attention to that trade to some extent.

CHICAGO WINTER FLEET, 1896 AND 1897.

Steamers.—Fayette, Samuel Mitchell, Iroquois, A. McVittee, Nicaragua, W. A. Haskell, Henry R. James, F. H. Prince, W. H. Carter, Schoolkill, City of London, Emma Thompson, George Burroughs, James B. Colgate, George W. Morley, Merida, L. C. Waldo, Niko, S. S. Curry, Cadillac, Philip Minch, City of Venice, Thomas Cranage, Cyclone, M. F. Butters, Madagascar, Kittie M. Forbes, John Blankinton, Robt. Mills, J. H. Prentis, C. W. Elphick, John W. Moore, John Mitchell, Sachem, H. L. Worthington, S. K. Martin, Robt. Holland, Albert Soper, John Spry, G. W. Westcott, Hattie B. Peru, George Dunbar, J. J. Hill, Samuel Marshall, R. R. Rhodes, M. M. Drake, City of Paris, Scranton, Olympia, Pentland, C. F. Bielman, Samoa, City of Cleveland, R. P. Flower, Arizona, City of Rome, D. C. Whitney, Mecosta, Tampa, Viking, S. C. Hall, New Orleans, Tom Adams, Ramapo, W. P. Ketcham, H. J. Jewett, C. S. Parnell, George T. Hope, A. D. Thompson, Caledonia, George N. Orr. W. H. Gratwick, Calumet (cutter), Lansing, City of Berlin, Mohawk, Saranac, T. W. Palmer, Buffalo, Dahlia (U. S.), Delaware, Boston, Chas. Reitz.

Schooners.—Mary Collins, Ralph Campbell, Ada Medora, Stampede, Wayne, Annie Neil, Jura, J. V. Jones, Three Bells, I. M. Forest, Lookout, George W. Naghtin, Penobscot, O. R. Johnson, Jessie L. Boice, George J. Boice, Mediator, C. J. McGill, Halsted, Annie Phorine, Alice, "134," North Cape, W. O. Goodman, Olga, Moravia, Cora A., Resumption, Ford River, James G. Blaine, America, A. Mosher, Lotus, L. A. Burton, C. H. Hackley, Hattie Hutt, Apprentice Boy, Cape Horn, George Steele, E. M. Stanton, Winnie Wing, Lake Forest, H. A. Richmond, Oak Leaf, F. W. Gifford, C. P. Minch, Guido, S. M. Stephenson, Norman, E. C. Hutchinson, Gee Gem, Ann Maria, George Sturges, Wm. Jones, D. L. Fuller, J. B. Wilbor, Middlesexet, George B. Owen, T. J. Bronson, D. R. Martin, G. H. Warmington, Sophia Minch, Ellen Williams, Elgin, J. T. Johnson, Paisley, Grampian, Kate Lyons, Stafford, Bertie Calkins, S. A. Wood, Butcher Boy, Parrana, Herschel, Richard Mott, Bell Brown, "130", M. Slauson, City of Chicago, Bertha Barnes, Cheni Ames, Libbie Nau, Radical, H. C. Winslow, M. E. Cook, Michigan, Iron Queen, Celtic, J. B. Merrill, Plymouth, Scotia, John Miner, Driver, Ashland, Ida Keith, Thomas Howland, J. H. Meade, K. Hinckman, Connelly Bros., Vega, M. E. McLachan, Moselle, Maggie Dall, City of Sheboygan, A. J. Mowry, Rising Star, Seamen, Commerce, R. Kanters, York State, Charlotte Rabb, Jessie Phillips, Vermont, John Mee, H. Tabor, Four Brothers, Iver Lawson, J. V. Taylor, Churchill, C. Michelson, A. G. Morley, G. M. Filer, Wonder, T. C. Wilson, Truman Moss, G. A. Marsh, E. R. Blake, John Mark.

A VERY SINGULAR CLAIM.

A claim against the government for the loss of a vessel is made by her owners residing at Milwaukee. It appears that the schooner Transit was lost at Kewaunee five years ago through striking the north harbor pier extension. The claimants attribute the loss of the vesesl to the fact that the government extended the pier 350 feet, but failed to shift the pier light from its old position to the outer end of the extension, and demand reimbursement for the value of the craft on that ground. It is the duty of masters of vessels to keep informed concerning the location and characteristics of lights at all lake points, and such a claim as the above, we have no hesitation in saying, won't and ought not to be countenanced.

O. S. RICHARDSON & CO.'S COAL RECEIPTS.

We are pleased to find that our Chicago patrons, Messrs. O. S. Richardson & Co. have been the largest receivers of anthracite coal at Chicago during the past season, and furthermore, it may be noted that the above company do not include the large receipts of bituminous received by the firm.

Fueling at Chicago has not been what might be termed brisk, yet it would appear that the O. S. Richardson Fueling Co. are the leaders and we can positively vouch for their superiority in matters of business, the most convenient docks, best weights and the superior combustion of vegetable matter, the credit for which should be awarded to the O. S. Richardson Fueling Co., at Chicago. This is the least that we can say for one of the most prominent and liberal firms in the "Windy City."

In support of the foregoing we publish a list of figures relative to the receipts of anthracite coal by lake at Chicago for the season of 1896:

	Tons.
O. S. Richardson & Co	234,906
Lehigh Valley Coal Co	201,519
Coxe Brothers & Co	152,000
E. L. Hedstrom & Co	150,375
Robert Law	124,291
Crescent Coal and Mg. Co	116,535
Philadelphia & Reading C. & I. Co	113,710
Peabody Coal Co	80,739
Youghiogheny & Lehigh C. Co	57,953
Pennsylvania Coal Co	43,988
Wm. Drieske	28,545
Drieske & Hinners	8,495
Otto Scheunnemann	6,637
Total	1,319,693

The above figures are taken from the bureau of coal statistics and represent the official statistics for the past season.

EASTERN FREIGHT REPORT.

From the last eastern freight report furnished the Record by Messrs. Funch, Edye & Co., New York, they say:

We can to-day in the main only repeat the remarks on the freight market for steamers contained in our last circular. New business appears to be but slowly forming, and evidently requires some concession both in grain and freight rate. Fixtures in the different grain shipping ports north of Hatteras are the result of shorts coming in the market to cover, and it appears to us that January trades are now mainly, if not entirely, provided for, whilst engagements for February and later months appear unimportant. The Atlantic cotton ports report dull and inactive business and manifest very little desire for tonnage; in any event not at owners' figures. The strength of the market is apparently centered in the Gulf ports outside of these the situation is evidently tending toward a lower range of freights.

Our market for sail tonnage continues inactive but firm and we have no change to report in the situation as last submitted.

BOOK NOTICE.

Modern Examination of Steam Engineers.—By W. H. Wakeman.—American Industrial Pub. Co., Bridgeport Conn. This work is written for engineers by an engineer and claims to illustrate and explain the practical theory of mechanical engineering. Certainly if anyone can do this, the author, who is also an instructor to a class of engineers, and has published several valuable works, ought to be in a position to do so. The book under review contains full and complete answers to 300 questions for the use of engineers and firemen, when preparing to make application for examination for U. S. government and state license; and for the information of engine builders, boiler makers, machinists, etc. The authorities quoted are reliable and up to date, the formulas and rules given are fully explained, thus enabling all to understand and correctly apply them.

OBITUARY.

John Gittlesen, aged 61 years, sail-maker, died at his home at Wheaton, Ill., Thursday, January 8, of cancer of the stomach. His health had been ailing for some months but he only gave up his work at Geo. B. Carpenter & Co.'s ship chandlery on the last Saturday in December. The deceased entered the employ of Hubbard & Rubl predecessors of Geo. B. Carpenter & Co., in 1848, soon after his arrival from Christiansand, Norway, as apprentic to the sail making business. He was advanced to the position of foreman soon after he had served his apprenticeship and has remained in the company's employ a their foreman ever since.

He was held in the highest esteem by his employers an was well known and much respected by a large circle of marine men. He leaves a widow, one son and two daughters. The funeral took place at Graceland cemetery on Sunday afternoon. The Hesperia Lodge of Masons, of which the deceased was a member, had charge of the funeral and conducted the service.

Benjamin Carpenter, Daniel Erricson and Henry D Vere, of the firm of Geo. B. Carpenter & Co., and three other old friends of the deceased were pallbearers. All the members of Geo. B. Carpenter & Co.'s establishmen attended the funeral, besides many other old friends.

GOODSELL PACKING.

The Goodsell Packing Co., 15 West Lake street, Chicago, are out with a handsome little brochure on packing. Their greeting in the 1897 catalogue says: "We know that boiling water at any temperature will not carboniz vegetable fibres; also, that fibres saturated with grease or oil not only refuse water, but will burn as soon as steam heat is applied. Yet the "loaded goods" cost less per pound to make, and weigh more per foot when on the selling scales. Hence, our reasons for making clean goods and our efforts to correct a prevailing opinion that these natural elements of destruction are desirable or necessary in the manufacture and use of rod packings. The present age of High Steam necessitates the observance of common sense principles in using goods as well as mechanically correct ideas in the construction of Steam and Hydraulic Packings." And the several specialties of the company are guaranteed.

PELEE PASSAGE.

(Communicated.)

The Hydrographic Office, in No. 10, 1895, of its Notices to Mariners, has published a chart of Pelee Passage from a survey in 1895 by the officers of the U. S. S. Michigan, furnishing all the minute details concerning this main thoroughfare; which for want of proper lights and buoyage has been and is still one of the most dangerous passages on the chain of lakes.

Taking the 5-fathom curve as a boundary line, the new chart shows Middleground to be a submerged part of Pelee island; and Southeast shoal a submerged part of Pelee spit. Grubb reef and detached spots south and northwest of it are submerged islands in the passage between Pelee island Pelee spit.

Within the 3-fathom curve, Middleground at the northeast extremity of the submerged part of Pelee island forms a patch about one mile long by half mile wide; and Southeast shoal at the extremity of Pelee spit forms a patch of about one mile by three-quarter mile. On the same spit another patch enclosed by the 3-fathom curve not far from Pelee spit light (The Dummy) is ¾ mile by ⅜ mile. The extreme end of Middleground is 3¼ mile from Pelee island light; and of Southeast shoal 5½ miles from the mainland, or 3¾ miles from the Dummy, the latter being 2 miles from the shore on the submerged spit. Besides the obstructions mentioned numerous small spots are found on the submerged extensions of Pelee island and Pelee spit.

Within the 5-fathom curve Grubb reef forms an elbow of about two miles in length and from ¼ to ¾ mile wide. The shoal south of it is ⅜ mile in diameter and the shoal northwest of it 0.7 by 0.4 miles.

Between the obstructions mentioned navigable channels or passages of greater or less depth are found.

The plane of survey to which soundings are referred in the new chart is 0.88 foot below the plane of reference for Lake Erie chart. The lowest monthly average level stated in the latter for a period of 16 years is 1.35. Therefore, to refer soundings in the new chart to this level they have to be reduced 1.35-0.88=0.47 foot. According to the official United States list of beacons. etc., "S. W. gales of any duration lower the water in Detroit river from 1 to 3 feet, and N. E. gales raise it about as much." As this change in the water level of Detroit river takes place in part by way of Pelee passage, it is safe to assume a similar change in the water level of this passage. Consequently to ensure safety in all kinds of weather, a further reduction of 3 feet of the soundings in the new chart is required to obtain the lowest water level in Pelee passage. Allowing a safety margin of one foot for preventing vessels to scrape the ground in stormy weather, the total reduction will be 3+1.+0.47=4.47 feet or in round figures 4½ feet. Thus the following tables are obtained for:

(A) OBSTRUCTIONS.

No.	Name of Obstruction.	Least Water in Feet.	
		By Chart.	Reduced.
1	Middleground	11	6 1-2
2	Shoal South of Grubb Reef	20	15 1 2
3	Grubb Reef	12 1-2	8
4	shoal N. W. of Grubb Reef	25	20 1 2
5	S E. Shoal	14	9 1-2
6	Shoal E. S. E. of Dummy	14	9 1-2

(B) CHANNELS AND PASSAGES.

No.	Name of Passage, etc.	Least Water in Feet.		Width of Passage. Miles.		Boundary Curve in Chart. Fathoms.
		By Chart	Reduced.	Naut.	Stat.	
1	West of Middleground	17	12 1-2	1.6	1.8	3
2	N. E of Middleground	30	25 1-2	0.9	1.0	5
3	South of Grubb Reef	30	25 1-2	0.5	0.6	5
4	East of Grubb Reef	30	25 1 2	0.6	0.7	5
5	West of S. E. Shoal	30	25 1-2	4.3	4.9	5
6	North of S. E. Shoal	16	11 1-2	1.0	1.1	3
7	S. E. of Dummy	21	16 1-2	0.35	0.4	3 1-2
8	North of Dummy	13	8 1-2	0.5	0.6	2

In the passages 2 to 5 inclusive, the reduced depth applies only to the 5-fathom curve in the chart; outside of it from 30 to 40 feet of water is found. These four passages contsitute the deep waterway; and on account of width, passage No. 2 and No. 5 are the principal ones; both connected represent the main route. Passage No. 3 and No. 4 may also be used in connection with No. 5, but the narrowness of the two renders them less desirable than passage No. 2.

Second in importance is the channel No. 7 S. E. of the Dummy, pretty close to it, for vessels of 16½ feet draft. Third in order is passage west of Middleground for vessels carrying 12½ feet water. The fourth place takes channel north of S. E. shoal available for 11½ feet draft. And fifth in order is channel north of the Dummy for 8½ feet draft.

For all these channels and passages the Canadian Government in its munificence has provided two lights; one at the N. E. point of Pelee island and the other on Pelee spit (Dummy); the latter only having a fog signal. For years these two lights have been the only guides of vessels through all the intracies of Pelee passage with the result of vessels frequently getting stuck there, suffering more or less damage to their bottoms. The late survey of the U. S. H. O. of Pelee passage has been instrumental in showing the great neglect of this passage as respects lights and buoyage; and the most glaring defects have but recently been remedied by placing two gas buoys in the passage, one at the N. E. point of Middleground, and one at the southern extremity of S. E. shoal. (See Notice to Mariners, No. 8, p. 117, 1896).

INDICATIONS AND COURSES IN CLEAR WEATHER.

(All courses are magnetic, distances in nautical miles; statute miles are obtained by adding 1-7 the number of nautical miles.)

Approaching Pelee passage from the West the Dummy S. E. ½ E. clears Grubb reef and shoal N. W. off it to the North; and Pelee island light S. S. W. clears them to the West. The gas buoy on Middleground S. by E. ¼ E. also clears them to the West. Middleground gas buoy E. ½ S. clears Middleground to the North. The old chart course from Colchester reef E. by S. ½ S. passes Middleground gas buoy at a distance of 0.3 miles and continued 0.8 miles further, when the gas buoy is W. ¼ S. 0.9 distant, the turning point is reached from which the course may be set for the channel S. E. of the Dummy or for Southeast shoal. From the turning point S. E. by E. passes 0.5 miles from S. E. shoal gas buoy, and the buoy may be kept abreast until the vessel is headed on the course for Long point or any other course South of it. From the turning point mentioned above E. ¼ N. passes the Dummy at a distance of 0.7 miles; when the Dummy is abreast, keeping it steadily abreast until the vessel heads N. N.E., leads into the channel S. E. of the Dummy, which course followed up carries through the channel.

The Dummy E. ¼ S. carries through the passage South of Grubb reef. On this course Pelee island light and Middleground gas buoy indicates the turning point 1.5 miles from the Dummy. From the turning point S.E. by E. ⅜ E. passes the Dummy at a distance of 0.7 miles, which when abreast and being kept abreast until the vessel heads N. N.E. leads through the channel S.E. of the Dummy as before. From the turning point just mentioned S.E. ¼ S. passes S.E. shoal gas buoy at a distance of ½ mile.

The channel east of Grubb reef is made by standing S.E. ½ E. for the Dummy until Middleground gas buoy bears S.W. ¾ W., or when the gas buoy is open to the South of Pelee island light ½ point. From this turning point S. ½ E. leads through the channel and intersects the route through the passage South of Grubb reef, when it turns for S.E. shoal, with the Dummy bearing N.E. ¼ E. This intersection point coincides with that of the course E. ¼ N. from the gas buoy on Middleground. From the turning point mentioned before S. by E. ½ E. touches the curve around the Dummy of 0.7 miles radius, which is made by keeping the Dummy steadily abreast until the vessel heads N. N.E., the course through the channel S.E. of the Dummy.

Approaching Pelee passage from the East, all courses through the several channels and pasages are the reverse of those enumerated above. On the main route S.E. shoal gas buoy West clears the shoal to the Southward. The Dummy W. by S. ¾ S. leads into the channel close to it, which course intersects the axis of the channel at a distance of 1 mile from the Dummy.

The passages: West of Middleground, North of Southeast shoal, and North of the Dummy, through which respectively 12½. 11½ and 8½ feet of water can safely be carried, are of special interest only to small crafts.

Under present conditions the different routes through Pelee passage as indicated by the lights and gas buoys, are of no avail in thick weather; for with lights obscured the passage is practically closed to navigation; the fog signal of the Dummy being the only guide. For miles the bottom of the lake on both sides of the passage is nearly a level plane on which the lead is powerless to verify position. At the Western entrance Middleground and Grubb reef rise suddenly from the ground without any premonition by the lead, rendering approach only possible at the risk of life and property. Colchester reef, 15 miles from Middleground, is the last point for verifying position and allowing only an error of ¼ point in course, on account of current and bad steering, the vessel will be off her course near the passage ¾ miles to the right or left, making the range of uncertainty 1½ miles. The entrance between Middleground and Grubb reef being only 1.6 miles, the probability of striking any of these obstacles equals nearly one or certainty. From all of which it is evident that in thick weather two buoys are required, one a gas and bell buoy and the other a whistling buoy, to mark the Western entrance of the passage to insure safety for life and property.

Approaching from the East in thick weather, vessels when striking the 6-fathom line in the chart may manage by steering S. by E. ½ E. and keeping to the 6-fathom curve to grope their way along the spit and Southeast shoal; but with no indications to round the shoal they are left in the dark. Here also a bell buoy is required in thick weather at the 5-fathom curve in the chart about E. by N. ½ N. from the gas buoy. To attempt the channel S.E. of the Dummy, in thick weather, from the East, is dangerous. But on account of the nearness of the fog signal of the Dummy the channel could probably be made, if its entrances were buoyed. The sudden change in depth at the border of the channel E. N.E. of the Dummy, and the extension of a large spit marked by the 3½-fathom curve S.E. from the Dummy, render it necessary even in clear weather, that this narrow channel should be indicated by buoys.

JOHN MAURICE.

Chicago, January 12, 1897.

CORRESPONDENCE.

PURE GRAPHITE.

Jersey City, N. J., January 17, 1897.

Editor The Marine Record.

Dear Sir: We note in The Marine Record an article on Superior Graphite Paint. The first paragraph says:

"It may not be generally known that when a diamond, the hardest of all known substances, is consumed by the flames of the blow-pipe the ashes resulting is graphite, precisely the same as that found in the mines discovered some years ago on the upper peninsula of Michigan."

We do not know what kind of graphite is found in the mines on the upper peninsula of Michigan, but we do know that when a diamond, a genuine diamond, is consumed by the flames of a blow-pipe there are no ashes of graphite, nor any ashes whatsoever left. A pure diamond is also pure carbon, and under the blast of a blow-pipe it goes off into carbonic acid gas, nothing is left.

If a piece of pure graphite, which is also another form of carbon, is subjected to the blast of a blow-pipe, it also passes off into carbonic acid gas and no ashes whatsoever are left. If a piece of graphite, or powdered graphite, not absolutely pure, is subjected to the blast of a blow-pipe, the ashes remaining, whatever they may be, represent the percentage of impurity of the graphite. In other words, the blast of a blow-pipe is used to determine the amount of impurity graphite contains.

The Dixon Company has been manufacturers of graphits for the past seventy years. Dixon's Silica-Graphite Paint has been on the market for twenty-five or thirty years, and has been used for forty years. It is the father of graphite paints. The records made by Dixon's Silica-Graphite Paint have been eye-openers to investigators of protective paints, and have brought the attention of practical and scientific men to the value of graphite paints properly prepared for all iron structures. Unfortunately there is today very much nonsense appearing in trade papers relative to graphite and graphite paints.

Yours respectfully,

JOS. DIXON CRUCIBLE CO.

SMUT IN GRAIN.

Relative to smut in grain it is perhaps not every vesselmaster that recognizes what "smut" actually is. From a most reliable source, if Prof. Plumb can be credited as such, we learn that "smut as seen by the farmer is either a distorted, greenish-white piece of vegetable tissue, or a mass of black, greasy powder, which generally appears breaking out from an ear of corn or from the leaf or stalk when green or succulent. The source is a simple, tubular, minute plant, too small to be seen by the naked eye, which grows in the tissues of the corn plant and feeds upon its juice. These little plants, of which there are vast numbers, branch out in tubular form when they find a spot in the corn plant that is especially nourishing. Then, inside these tubes, minute bodies termed spores (seeds) develop, and finally the spot becomes a mass of these, and then all of the little plants excepting the spores wither away. The dark colored, loose smut is mostly the mass of spores, of which there are countless numbers. A single cubic inch of them would contain over 15 billions. The top of a pin-head that has been moistened will bear from 30,000 to 50,000. These spores are really seeds, and if the right degree of moisture is applied they germinate in a few hours and produce very minute, thread-like plants, from which soon develop sporids. The wind may blow these latter upon a young corn plant, in which case they may grow into its vegetable flesh and develop to a remarkable degree, and eventually break out in the common form of smut. This disease is distributed through the agency of the smut, and the more the spores are scattered about the more prevalent it may become. It is abundant all over the United States and in the corn-growing parts of Europe. While considerable damage may occur from this fungus, the extent of this is not generally appreciated by corn growers.

In the transportation of grain, especially where it is held over during winter storage, this "smut" claim not unfrequently comes in to the derogation of the carriers and it would seem as if the carrier was partly responsible for the condition of the cereal on delivery. Such a claim ought to be contested, as seen from the foregoing, and we can quote the American Elevator and Grain Trade Journal as being with us on this subject.

Written for The Marine Record.

A STEADY PLATFORM AT SEA.

By W. E. Redway, Buffalo, N. Y.

CHAPTER I.

Many a wretched, seasick ocean traveller, lying in his berth weak, ill and miserable, has wished it were possible to overcome that queer sort of up and down motion which is found on the ocean. He would give worlds if it could be only so far mitigated as to enable him and everyone else to enjoy a sea voyage without having to endure the discomfort and suffering caused by seasickness.

The imagination of the poor, unfortunate victim of this distressing malady conceives all kinds of contrivances for obtaining some steady platform upon which to recover his vanished energies. From a swing tray, his mind gets to a swing cot, from that to a cabin hung in gimbals like a mariner's compass, whose card remains horizontal no matter to what length the ship may roll or pitch, and as a climax to his progressive reasonings the idea finally occurs to him, why cannot a ship be designed so that she will be altogether indifferent to the action of the waves, and remain perfectly steady?

After studying the problem for a time between the paroxysms of his illness he reaches the obvious conclusion that it can only be done entirely by making the ship big enough, and in endeavoring to fix the limit of size he realizes that to fulfill the conditions she would have to be of such stupendous proportions that the Great Eastern, with her 680 feet of length, 82-foot beam and 30,000 displacement would be as a jolly boat to an ocean liner latter portion of the nineteenth century, the results achiev- compared with his ideal ship. As, however, the production of such floating islands can scarcely yet be considered within the region of praticability, whatever the future may have in store, he has to give up the further consideration of the subject in despair, and failing any relief has to "grin and bear it," and wait for fine weather with a smoother sea.

Other minds than that of the poor victim referred to have given much thought to the subject of how to make a vessel steady at sea, and it forms today one of the most interesting studies in naval design; but with all the progress that has been made in naval construction during the later portion of the nineteenth century, the results achieved in that direction are as yet far from the seasick man's ideal.

Much more attention has been given to this subject in the navies of Great Britain and France than in the commercial marine of those or any other nation; and although the experience of the past has enabled designers and naval constructors to produce battleships with a length of 380 feet, carrying 4,000 of armour plating around their topsides, and a number of heavy guns upon their fighting decks, high above water, in which the rolling and pitching is far less on an average, than was the case with ships built fifteen or twenty years ago, it is nevertheless on record that even recently, that is to say, within two or three years, several of the most advanced type of battleships were, after trial, found to be insufficiently steady in a rough sea, and immense bilge keels were fitted to them to increase the mounting of their period of rolling

The necessity for a steady gun platform for a fighting ship is too obvious to need more than bare assertion, and the desirability of it for merchant ships, more particularly those engaged in the carrying of passengers, will doubtless be freely conceded. Consequently he who can succeed in producing a satisfactory solution of the problem will deserve well of his generation..

The palatial luxury to which the traveling public of today is accustomed would be better appreciated at sea if means could be adopted for preventing the horrors of seasickness, and not only so, but berths on such steamers would be at a premium to the manifest advantage of their owners.

Before attempting to forecast the type of vessel which would be necessary to attain the desired result, it will be as well to cast a short retrospect over what has been attempted in this direction already.

The most noteworthy examples that occur to one are, first, the side-wheel steamer Bessemer, built early in the seventies to run at 20 knots per hour across the Straits of Dover. The twin boats Castalia and Calias Douvres built for the same service.

The Czar of Russia's yacht Livadia, built at Fairfield on the Clyde in 1880 by John Elder & Co. from the designs of and under the personal supervision of Admiral Popoff of the Russian Navy, the celebrated originator of the circular ironclads.

The American monitor Maintanomoh, the U. S. ram Katahdin, the French ironclad Devastation and the whalebacks of the Upper Lakes.

The fact that neither of these vessels (except the whalebacks) has been repeated affords conclusive evidence that they have not achieved all that was originally claimed for them. At the same the lessons taught by their construction are extremely valuable if only in clearing away obstructions to the road to success by teaching what to avoid. Experiments made with full sized, full powered steamers are necessarily costly undertakings, and when carried out without adequate scientific knowledge of principles or without being regulated to some extent by successful precedents, are apt to have disastrous results.

(To be Continued.)

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING IN 1896.

During 1896, exclusive of war ships, 696 vessels of 1,159,751 tons gross, viz., 628 steamers of 1,113,831 tons and 68 sailing vessels of 45,920 tons, have been launched in the United Kingdom. The war ships launched at both Government and private yards amount to 55 of 163,958 tons displacement. The total output of the United Kingdom for the year has, therefore, been 751 vessels of 1,323,709 tons. In these notes, war ships are excluded from consideration except where they are specially mentioned.

The output of the year in the United Kingdom exceeds that of 1895 by over 208,000 tons. The increase occurs exclusively in steam tonnage, which reaches this year a higher figure than it has previously attained, at least for the preceding eight years. Sailing tonnage, which formed 24 per cent. of the output of 1892, forms less than 4 per cent. of the output of 1896.

The war ship tonnage launched in 1896 shows a slight ncrease over the figures for 1895, due to vessels constructed in the United Kingdom for foreign flags. The tonnage launched for the British Navy is less by 21,000 tons than last year.

In recent annual statements of this kind, the output of the year 1889 has been assumed to be nearly indicative of the maximum productive capacity of the the shipbuilding yards of the United Kingdom. It is interesting to note that the output of 1896 comes within 50,000 tons of the figures for 1889; while, if war ships be included in the comparison, the present return exceeds the 1889 total by about 64,000 tons.

As regards the material employed for the construction f the vessels included in the United Kingdom returns for 1896, it is found that, of the steam tonnage, 99.3 per cent. has been built of steel and 0.65 per cent. of iron. The iron steam tonnage is practically made up of trawlers, and comprises no vessel of more than 212 tons. Of the sailing tonnage, 96.2 per cent. has been built of steel, and 3.2 per cent. of wood.

Of the total output, 776,013 steam tons and 42,892 sailing tons, or 818,905 tons in all, 70.6 per cent., belong to ports in the United Kingdom. In this connection it may be noted that Lloyds Register Wreck Returns show that the losses, etc., of United Kingdom vessels during twelve months average 269,000 tons, 183,000 steam, 86,000 sail. Sales to foreign and colonial owners for the twelve months ending November, 1896, reach the large total of 355,000 tons, 283,000 steam, 72,000 sail. On the other hand purchases from foreign and colonial owners during the same period amounted to 22,000 tons, 13,000 steam, 9,000 sail. The sailing tonnage of the United Kingdom would thus appear to have decreased by about 106,000 tons, while the steam tonnage has increased by about 323,000 tons. The net increase of United Kingdom tonnage during 1896 is therefore about 217,000 tons. This figure exceeds the similar estimate for 1895 by 88,000 tons, but falls below that for 1894 by 212,000 tons. The reduction since 1894 is due to the remarkable increase in sales to foreign and colonial owners, and to a considerable reduction in purchases from abroad.

About 30 per cent. of the total output has been built to the order of foreign and colonial shipowners in 1896, as compared with 20 per cent. in 1895 and 13 per cent. in 1894. Germany has this year provided the largest amount of work for British shipbuilders, 30 vessels of 117,870 tons, over 10 per cent. of the total output, having been built for that country. Russia follows with 23 vessels of 34,524 tons, nearly 3 per cent. Next comes Norway, for which 28,303 tons, 2.4 per cent., have been built. Denmark and Japan have each taken about 24,600 tons; and the British Colonies 16,000 tons. The other countries which exceed 10,000 tons are, Belgium, 11,800 tons; Sweden, 11,736 tons; South America, 11,568 tons, and Holland, 11,222 tons.

Of the principal shipbuilding districts of the country, Glasgow takes the lead with an output of 247,635 tons. Then follow in order Sunderland, 215,956 tons; Newcastle, 200,746 tons; Belfast, 119,836 tons; Greenock, 116,143 tons; Middlesbro', 112,932 tons, and Hartlepool, 82,093 tons. Over 77 per cent. of the sailing tonnage launched in the United Kingdom has been produced in the Clyde district.

The largest steamers which have been launched in the United Kingdom during the year are the following:

	Tons gross.
Pennsylvania	11,330
Canada	8,806
European	8,194
China	7,899

The largest sailing vessel is the Lady Wentworth, 2,715 tons gross.

While, in the United Kingdom, only one steamer of more than 10,000 tons has been launched, no fewer than four have been launched in Germany. These are the Barbarossa, 10,769 tons; the Bremen, 10,550 tons; and the Friedrich der Grosse and Koningin Luise, each 10,536 tons. France has launched seven sailing vessels of 2,800 tons and above, the largest being the Dunkerque of 3,050 tons. All these sailing vessels have been built under the survey of Lloyd's Register. From the Great Lakes of North America are reported eight sailing barges ranging between 3,256 and 3,419 tons.

The year has been marked by the introduction of the "trunk-deck" and "trunk self-trimming" steamers. Four vessels of these types have already been launched, and those intended to sail under the British flag have been built under the supervison of Lloyd's Register. The totals for the United Kingdom during the year under review include, in addition, 124 steam trawlers and other fishing vessels; twenty-two dredgers, steam barges, etc.; thirty yachts; twenty-six tugs; and other vessels designed for special service.

As regards the movements of the shipbuilding industry during the course of 1896, Lloyd's Register Returns show that, irrespective of war shipe, the total tonnage under construction in the United Kingdom on the 31st December, 1896, exceeded by about 73,000 tons that under construction twelve months previously. The increase is entirely in steam tonnage, the sailing tonnage having slightly fallen off. At the close of 1895, 711,562 tons, 678,318 steam, 33,244 sail, were under construction. In March and June the figures rose to 769,000 tons and 774,000 tons, respectively. The September returns indicated a reduction of 115,000 tons on the previous quarter; but during the last three months a remarkable amount of tonnage has been put in hand and the earlier level has been more than regained. At the present time, there are 784,711 tons, 755,975 steam, 28,736 sail, under construction in the United Kingdom. It should be added that the war ship tonnage under construction in the country, which, three years ago, amounted to 95,000 tons displacement, has since steadily risen. In December, 1894, it amounted to 260,000 tons; in 1895, to 306,000 tons; and at the present time it amounts to 330,000 tons.

At the close of 1896, Japan takes the lead among the foreign customers of the shipbuilders of the United Kingdom. During 1895, Japan acquired 68,000 tons of "old" British tonnage, but at the end of the year was only reported to have 2,000 tons under construction in this country. During 1896, the "old" tonnage sold to Japan has sunk to about 14,000 tons; but at the present moment no less than 62,000 tons, besides two first-class battle-ships, are being built here for that country. It may be worth while to note, however, that vessels of considerable tonnage are now being built in Japan—three steel steamers ranging from 1,492 to 5,790 tons, besides smaller vessels. In Germany, four steamers, including two already launched but not yet completed, exceeding 10,000 tons each, are being built; while in France the most noticeable feature is the development of the construction of large sailing vessels—thirteen, varying from 1,900 ao 3,338 tons, being now in hand. It appears that, excluding war vessels, there have been built abroad during the year, 260 steamers of 299,421 tons and 157 sailing vessels of 108,710 tons.

CONTINUED ON PAGE 10.

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CLEVELAND, O., JANUARY 21, 1897.

The Iowa Iron Works, Dubuque, Iowa, built the torpedo boat Ericsson and a revenue cutter. This is the class of departmental tonnage which could be best built at lake shipyards and not as some people foolishly imagine large battleships or cruisers.

We look around these times for men of more than ordinary ability and in thus glancing about for something more than mediocrity, of which there is enough and to spare, our attention has been called to the individuality of Mr. Thomas Cranage, who, to say the least, is one of the brightest minds contained in the association of lake carriers and with whom rests a leading part in the future of that association.

The Nicaragua canal route across Central America has still a good many friends and influential ones at that. In the Senate this week, Mr. Morgan mentioned the names of ex-Senators Edmunds, of Vermont, and Brown, of Georgia, as enthusiastic friends of the Nicaraguan canal and said that all over the United States, east and west and south and center, it had been supported by men who concurred most heartily in regarding the project as one affecting the national commerce, glory and honor.

While discussing the "Soo" river rules at the annual meeting of the Lake Carriers' Association last week, Capt. James Davidson made the speech of the session and perhaps of his life. "You can't blame our poor captains," he shouted. "They have to do as their owners tell them, but I want to say to all of you that to increase the speed in the Soo river is to manifold the perils of navigation at that point, and will in losses and delays greatly exceed any benefits to be derived from a slightly increased speed Our immense ships with their cargoes and tremendous displacement, moving all the water there is, cannot safely pass one another at that point without the most careful and skillful handling, and if two boats, large and deep-loaded, only check down a half mile from one another, their speed is scarcely diminshed when they meet, and the terrific suction is almost certain to cause them to collide or run aground." Assembling some of the scattered members after a recess the captain hauled out from some secret place in his dunnage an old-fashioned silver call resembling a bosun's whistle and a few toots called all hands around, as it had no doubt frequently done before in Capt. Davidson's packet ship days across the Atlantic, in fact the call is an old Glasgow memento.

END OF NAVIGATION SEASON.

Judge Swan, of Detroit, holds that the close of navigation on the lakes, at least for 1894, was on Nov. 30, and after that "extraordinary navigation" set in. This decision was arrived at in a suit brought by the owners of the steamer Selwyn Eddy against the Northern Steamship Co. The Eddy refused to make a trip that would have kept her on Lake Superior up till Dec. 10, therefore the charterers engaged another steamer for $6,000 and refused to pay the $2,700 the Selwyn Eddy had earned on a previous trip. Judge Swan ruled in favor of the Eddy and dismissed the charterers' counter claim for excess freight paid to the other steamer.

Judge Swan's ruling is no doubt right and proper, but we have had ordinary freight steamers navigating safely up till January and there will no doubt be more of it in the future, as in actual practice the seasons are lengthening out and properly so too, with the fine, powerful fleet of steamers now engaged in the lake trade. Now, relative to the insurances, which Judge Swan argues is about the best means of determining the meaning of the phrase "close of navigation." In a letter to The Record the well known marine insurance firm of C. A. McDonald & Co., general agents, Chicago, write as follows:

"We have read with interest your article on fall navigation in your December 31st issue. The impression that the article gives is that it is imposible to insure vessels after the 10th or 12th of December, no matter how well they are fitted for winter navigation. We are especially interested in one of the two vessels you mention, the "Aurora," as this office insured her and her cargo on the trip from Chicago to Buffalo and the hull on the Buffalo-Toledo trips. We wish to disabuse your mind of the impression that it is impossible to get insurance on boats on the Lakes if they are properly fitted to encounter ice in the Lakes. If you will consult with Mr. John Corrigan he will, no doubt, inform you that this was the only office that would insure his boat from Chicago to Buffalo, and any of our customers will tell you that we are always ready to insure hull and cargo, winter and summer, under conditions mentioned above.

"As to running vessels in winter without insurance, we would say, in view of the heavy losses of the last two or three years, no conservative owner would do so. You will probably remember the "Chicora," total loss in '94; the "Ranney," sunk in '95 by ice; the "Geo. W. Adams," total loss, hull and cargo, "Colonial," '95, and the "Italia," damaged to the extent of $4,000 this winter in going through ice about three or four inches thick. In December, '95, a great many boats were caught in the ice field, as you will no doubt remember, and several of them were badly damaged, on 7th to 10th December.

"We have only cited a few of the large losses and could give you a long list of minor disasters caused by ice, as well as large ones in previous years. The percentage of loss for number of boats in commission is very large."

The foregoing refers chiefly to the prudence of having insurance during the winter months, etc., and does not attempt to limit the day on which insurance must cease, in fact these general agents state emphatically that they are always ready to insure hull and cargo, winter and summer, when the vessels are properly fitted to encounter ice. We rather think that Judge Swan will give the lake marine a day or two over Nov. 30 in the future and not close us down too early.

RECORD SUBMARINE WORK.

A great submarine diving feat is reported from New South Wales, Australia. It appears that the steamer Catterthun, after stranding on the Seal Rocks, foundered in thirty fathoms of water. There was £10,000 ($50,000) in specie aboard of her, £8,000 of which, or $40,000, has just been recovered. The two divers engaged in the work could only stay under water for eleven minutes at a time and the greatest number of descents made in one day was five, working under a pressure of 74 pounds to the square inch. While engaged on the hull of the sunken steamer the depth was only 27 fathoms, but owing to a very strong current one of the divers was carried over the side of the vessel and rested on the bottom at a depth of 30 fathoms, and while he was only at this depth for a few minutes, the record of 180 feet was made, however, after being drawn to the surface he slept for twenty-four hours at a stretch before being fully recovered and ready for work again.

The claim is made that this is the deepest diving on record, the greatest depth previously worked in being on the ship Alphonse XII, sunk off Las Palmas in the Canary Islands in 26 fathoms and from which a large quantity of gold was eventually recovered.

There are other records, more or less well substantiated, as for instance, diver Harrington recovered an iron safe from the cabin of the Atlantic, sunk in Lake Erie at a depth of 157 feet, or a foot more than 26 fathoms. Yet there are quite a number of instances where divers have given out or rather experienced temporary paralysis when working at a depth of ten fathoms, or 60 feet. In looking further into the question of submarine diving it is probable that the greatest depth ever reached was at the wreck of the Cape Horn in Pichidanque Bay, off the coast of South America, when seven descents were made by a diver named Hooper in a depth of 33 1-2 fathoms, or 201 feet, and in one descent remaining below for a period of forty-two minutes, having a pressure on him of about 84 pounds to the square inch.

The pressure may be approximated by allowing 2 1-2 pounds per square inch for every fathom of depth, so that at 100 feet, or 16 1-2 fathoms, the pressure would be about 43 pounds to the square inch of surface.

A bill has been introduced in the New York legislature which, if it becomes a law, may result in revolutionizing traffic on the Erie canal. Up to last year no corporation could be formed for the purpose of traffic on the Erie canal, only individuals and partnerships having that privilege. Then a law was enacted allowing corporations with $50,000 capital to do business on the canals. The present bill increases the capitalization to $4,000,000, and is said to be in the interest of the company organized by Erastus Wiman and other capitalists recently. The articles of incorporation give the capital stock at $50,000. Canal men argue that if the bill becomes a law that it will give a gigantic company absolute control of the canals, and they intend to fight it. This seems a "dog in the manger" sort of feeling, for after all, if transportation charges are to be brought down to the lowest possible figure it is only by a combination of interests and capital that such can be accomplished. Individuals cannot give the highest efficiency at the lowest cost, or at least, they have had ample time to try in the Erie canal trade and it is now in order for something else to be done. The new company proposes to do this.

MARINE SOCIETY.

It gives us great pleasure to note that Capt. Geo. L. Norton, editor and manager of the Marine Journal, New York, has been elected first vice-president of the Marine Society of the city of New York. This society was organized in 1769 and incorporated in 1770, only two years later than the Chamber of Commerce, whose boast is that it is the oldest living commercial organization in the United States.

It is a question if there is a benevolent association in the port of New York that has disbursed as much money, and as judiciously, among its especial charges, the widows and the fatherless, and the burial of its dead, as the Marine Society. One of the earliest funerals of one of its members is recorded in a synopsis of its history as follows:

"Near the close of the year 1799, the Society, with its flag draped, joined in the throng which, without distinction of class or party, mourned the death of him who, by true heroism and unselfish patriotism, had won the heart of every lover of the country which claimed as its father our revered brother, George Washington."

SUCCESSFUL BIDDERS ON FIVE NEW VESSELS FOR THE LIGHTH-OUSE DEPARTMENT.

Through the courtesy of Commander Wilde, U. S. N. naval secretary of the Light-House Board, we are enable to furnish the names of the successful bidders for the three light-vessels and two tenders, and the amounts of their bids as follows:

The Bath Iron Works, Limited, Bath, Maine, two light-vessels for Atlantic coast and one tender	$221,500 00
Mr. Lewis Nixon, The Crescent Shipyard, Elizabeth, N. J., one tender	72,000 00
Wolff & Zwicker Iron Works, Portland, Oregon, light-vessel for Pacific coast, with electric plant	73,000 00

SHIP CANAL TO THE COAST.

The national commission, composed of James B. Angell, president of the University of Michigan, of Ann Arbor, Mich.; John E. Russell, of Leicester, Mass., and Lyman E. Cooley, C. E., of Chicago, appointed to look into the question of making a ship canal to the coast, has sent in their report to Congress, from which it appears:

1. That it is entirely feasible to construct such canals and channels as will be adequate to any scale of navigation that may be desired between the several great lakes and to the seaboard, and to conduct through the same domestic and foreign commerce; and that, in our opinion, it will be wise to provide such a channel of a depth of not less than 20 feet.

2. That starting from the heads of Lakes Michigan and Superior, the most eligible route is through the several great lakes and their intermediate channels, and the proposed Niagara ship canal (Tonowanda to Olcott) to Lake Ontario by way of the St. Lawrence river; and the American seaboard may be reached from Lake Ontario by way of the St. Lawrence and Lake Champlain and the Hudson River; or by way of the Oswego, Oneida-Mohawk Valley and the Hudson River.

3. That the alternative routes from Lake Ontario to the Hudson River require complete surveys and a full development of economic considerations to determine their relative availability.

4. That a moderate control of the level of Lake Erie and of the Niagara River above Tonawanda may be justified in connection with the Niagara ship canal, the determination in this matter rest on a full examination of the physical conditions.

5. That the policy should contemplate the ultimate development of the largest useful capacity, and that all works should be planned on this basis, and that the actual execution should conform thereto, except in so far as the works may, without prejudice, be progressively developed with the actual demands of commerce.

The British commission, which was appointed shortly after the American commission, was composed of Messrs. Oliver A. Howland, M. P. P., of Toronto; Thomas C. Keefer, C. E., of Ottawa, and Thomas Monro, C. E., of Coteau Landing. Briefly the matters which call for early attention are the following:

1. That complete surveys and examinations be made and all needful data to mature projects be procured for:

Controlling the level of Lake Erie and projecting the Niagara ship canal. Developing the Oswego-Oneida-Mohawk route. Developing the St. Lawrence-Champlain route. Improving the tidal Hudson River and improving intermediate channels of the lakes.

2. That the collecting and reducing of existing information, supplemented by reconnaisances and special investigations, be continued until the general questions have been fully covered.

3. That a systematic measurement of the outflow of the several lakes and a final determination of their levels shall be undertaken.

4. The complete surveys and investigations, with measurements of the outflow of the several lakes, and full investigation of collateral questions, will cost not less than $600,000, and require some years of time.

It is possible that the measurement of the outflow of the lakes and the final levels can be as well done through some other agency, and this item may be taken at $250,000 to be expended through a series of years, and this should be at once undertaken, on account of the prevailing low water on the lake system, which cannot be expected to continue.

The specific surveys and investigations are in themselves estimated at $350,000, and will take two to three years, and of this not less than $150,000 should be appropriated the first year; along with such additional sums as may be required for measuring the outflow of the lakes, of which $100,000 should be made available during the first year.

The report expresses the great appreciation of the American commissioners at the service rendered by the Canadian commission. All the matter, much of it of great importance, contained in the public offices of the Dominion, was furnished to the Americans. The Canadians cordially responded to all inquiries, and made special surveys along the route from Lake St. Frances to Lake Champlain by the Richelieu River.

CONNEAUT AS AN IMPORTANT PORT.

It would now appear as if the Ohio port of Conneaut is destined to become an important port on Lake Erie. The stockholders of the Pittsburg, Shenango & Lake Erie and of the Pittsburg & Butler Railroad companies are now under one management under the name of the Pittsburg, Bessemer & Lake Erie Railroad Co.

Active work on improvements is ready to begin. The amount of money to be expended on the consolidated railroad line and at Canneaut harbor is an enormous sum. The harbor and docks will be operated by the Conneaut Dock Co., in which the railroad company is interested but which Mr. Carnegie himself controls. With the mammoth coal machines that will be placed on the docks the cost of loading coal will be reduced from the present rate of 17 cents a ton to 1 cent per ton. This will do away with hundreds of ore and coal handlers. But two men will be required for each coal machine that will unload a car of coal in two minutes.

Ten miles of track is to be laid around the docks to permit the storage of cars, and a steady loading and discharging of vessels.

GRAIN AT THE HEAD OF THE LAKES.

The receipts and shipments of cereals at Duluth, Minn., during the month of December, as compared with the same period of the preceding year, were, according to Frank E. Wyman, secretary of the Board of Trade, as follows:

Articles.	Receipts.		Shipments.	
	1896.	1895.	1896.	1895.
Wheat, bushels	2,419,765	68,77 745	1,348,276	2,390,845
Corn, bushels	6,156	2,486	1,031	.....
Oats, bushels	453,412	308,419	70,810	22,447
Barley, bushels	185,533	180,892	264,816	269,793
Rye, bushels	181,896	50,759	79,093	62,568
Grass seed, pounds	.....	.....	.....	.....
Flaxseed, bushels	370,931	417,742	369,456	224,099
Flour, barrels	26,200	.....	248,740	.....
Flour production Duluth and Superior	131,495	194,705	.....	.....

There seems to be quite a wide difference between the December receipts and shipments but this is not an indication of the entire season's business and is only valuable as a tabulated statement for the last month of the year.

THE UNION DRY DOCK CO.

The steel oil tanker building at the yards of the Union Dry Dock Co. at Buffalo to the order of the Standard Oil Co. will be launched this week. The Union Line steamers New York and Rochester will receive a $35,000 rebuild and a second large steel steamer for the Union Steamboat Co. is to be built, making two new vessels, sister ships to the Ramapo.

MARINE ENGINEERS IN SESSION.

The National Association of the Marine Engineers' Beneficial Association, an organization which includes the greater part of the 19,000 licensed engineers of the merchant marine, assembled in annual convention at Washington this week.

Delegates from nearly every section of the United States are in attendance, and as important matters affecting the interests of their members are at stake the national organization remains in session for the entire week.

Working under the direction of these men are at least 75,000 water-tenders, oilers, firemen, and coal passers. Thus the deliberations of the convention are watched with interest in all parts of the country.

Committees from the organization will call upon various committees of the House and Senate to urge reform, not only in the merchant marine, but in the naval service.

FIRE CANNOT DESTROY.

The Marine Record of Cleveland, one of the best weeklies published in the interest of the traffic of the great lakes of this country, had its entire plant destroyed by fire recently, but it did not miss an issue, and is now coming out in a new dress of type and looking handsomer than ever. Evidence of the scorching it received is on the edges of the paper in the issue for January 7. With Capt. Swainson in command again, as he is, and a new plant, The Marine Record is more enthusiastically looked for by the inland navigation interests of Toronto than ever before. It has a large circulation at this port.—Toronto Globe.

SOO RIVER RULES.

The executive committee of the Lake Carriers' Association will recommend to the Secretary of the Treasury that the penalty of confiscation of property for violation of the Soo River rules be repealed.

The speed limit was allowed to remain at seven miles per hour. Rule six was altered to read:

"Steamers bound in opposite directions shall slow down to a speed not to exceed five miles an hour when within a mile of each other and until they pass."

A rule was added to protect small boats. All yachts and tugs and vessels of less than 100 tons burden shall be exempt from the rule.

Rule 1 was also changed, and provides that a steamer behind another and overtaking her, shall also slacken her speed on nearing the forward steamer, and pass her slowly. No attempt shall be made to crowd the steamer ahead, or cross her bows.

AMERICAN SHIPMASTERS ASSOCIATION.

The American Shipmasters' Association, consisting of delegates from the various lodges on the great lakes, is in session at Washington and will not conclude its labors before the last of the week. The association is revising its constitution and will adopt resolutions recommending the modification in some minor points of the regulations governing navigation in St. Mary's River. After a year's trial the masters are satisfied that the speed limit of seven miles an hour, fixed by the regulations, is too low, and desire it to be raised to ten miles. They desire also that vessels of less than a hundred tons burden be exempt from the provisions of the regulations, as they, being of light draft, can easily run out of the channel and around bigger craft.

THE HOWDEN HOT DRAFT.

We have received from the Dry Dock Engine Works, Detroit, Mich., a book on the Howden system of hot draft, an improvement which is being widely appreciated on the lakes. The testimonials and letters contained in the book amply demonstrate the efficiency and economy of the hot draft system and the claims are presented in such a convincing manner that it is rather difficult to understand why every steamer on the lakes does not make use of this addition to steaming qualities.

SUEZ CANAL TRAFFIC.

Senator John T. Morgan of Alabama in advocating the construction by this government of the Nicaraguan canal states that the Suez canal is now a permanent property, earning 6 per cent. on $300,000,000, and it has grown to these proportions in twenty-seven years. The latest quotations of the shares on the Paris Bourse were on last Saturday, January 16, 1897, and the 500-franc shares ($100) were quoted at 3,250 francs—common stock of the canal company—or in dollars a share of the par value of $100 is worth $650. The Suez Canal was opened to traffic in 1869. Its first year's realization was really in 1870. The growth and present magnitude of its business are shown in the following table:

Year.	Vessels.	Tonnage.	Receipts.	Dividends.
				Per cent.
1870	486	436,609	$ 869,150	.....
1875	1 494	2,009,934	5,281,150	.....
1880	2,026	3,057,421	7,298,524	.....
1885	3,624	6,335,752	12,011,451	.....
1890	3,389	6,890,694	13,485,055	17⅜
1891	4,207	8,698,777	16,789,103	20⅛
1892	3,559	7,712,029	14,977,712	18⅜
1893	3,341	7,659,060	14,222,436	18
1894	3,352	8,039,175	14,825,411	18
1895	.....	.....	16,000,000	18½
1896	.....	.....	15,800,000	.....

It has gone on with a steady, gradual increase. I could not get the number of vessels for 1895 and 1896, but perhaps I will get it before I close my remarks on this subject. But I will take 1894. The number of vessels which passed through the canal in 1894 was 3,352, against 486 in 1870; the tonnage was 8,039,175, against 436,609 in 1870, and the receipts were $14,825,411, against $869,150 in 1870. The percentage of receipts upon the capital invested was 18.50 per cent in 1895.

In 1896 the value of domestic exports reached a total of $1,005,878,417, an increase over 1895 of $181,000,000. The value of imports decreased during the same period more than $121,000,000. These figures show that while we sold more merchandise abroad our foreign bills were greatly decreased.

For Sale

The Steamer Allie E. Shipman.

Forty gross tons. Dimensions—61 feet keel, 14 ft. 4 in. beam and 5 ft. 6 in. depth of hold, 12 square high-pressure engine. Scotch type boiler, allowed 125 pounds pressure. Boat built at Manitowoc in 1892. She is housed and licensed to carry 45 regular passengers. and has an excursion permit to carry 125 passengers.

Will sell or trade this boat for something larger. Now lying at Escanaba, Mich. For further particulars apply to

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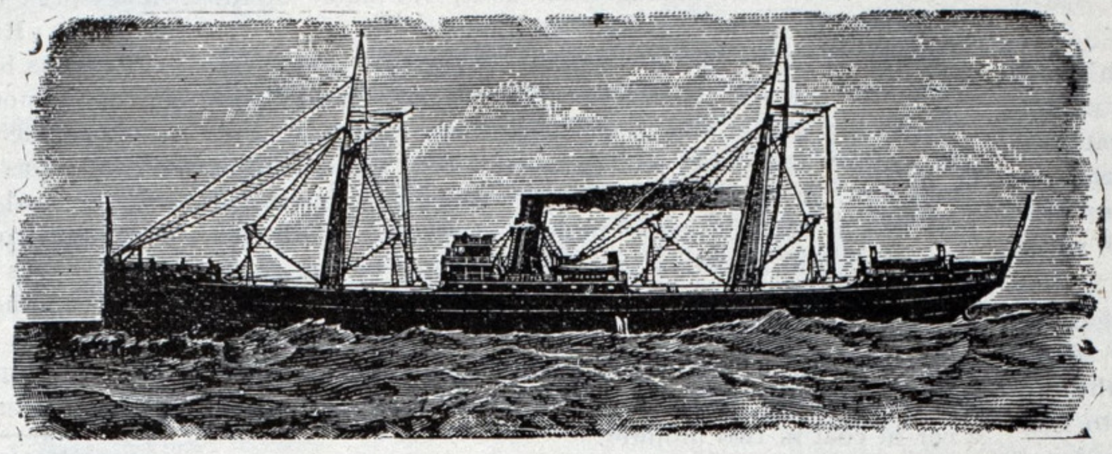
Escanaba & Gladstone Transp. Co.
ESCANABA, MICH.

F. W. WHEELER & COMPANY,



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193-195 Bank Street, CLEVELAND, O.
202-210 South Water Street, CHICAGO, ILL.

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING IN 1896.

CONTINUED FROM PAGE 7.

The total output of the world during 1896, exclusive of war ships, appears to have been about 1,568,000 tons, 1,413,000 steam, 155,000 sail. Lloyd's Register Wreck Returns show that the seagoing tonnage of all nationalities totally lost. broken up, etc., in the course of twelve months amounts to about 726,000 tons, 307,000 steam, 419,000 sail. It will thus be seen that, while the sailing tonnage of the world has been reduced by 264,000 tons during 1896, the steam tonnage has increased by about 1,106,000 tons. The net increase of the world's mercantile tonnage is, therefore, 842,000 tons. Of this total, the net increase in the tonnage of the United Kingdom, as given above, represents nearly 26 per cent. Of the new tonnage launched, however, the United Kingdom has acquired over 52 per cent.

MARINE INSURANCE DECISION.

M'ALLISTER et al. v. HOADLEY et al.

(District Court, S. D. New York. Nov. 9, 1896.)

Marine Insurance— Lloyds' Policy—Several Liability to the Assured for Whole Subscription—Contribution.

A Lloyds' policy insured for $1,000 the lighter A., valued at $4,000. The policy was a printed form, with the printed signatures of thirty individuals, issued and signed by one common attorney. It provided that each subscriber should be severally but not jointly "liable for one-thirtieth of $1,000." In the rider was the clause: "All insurance covering the property hereby insured shall contribute simultaneously and for their respective amounts, without regard to dates." Two other policies on the same vessel in other companies, insured for $3,000, the residue of her value. On the failure of the defendant company to pay, after a loss amounting to $1,015.53: Held, (1) that the rider clause had reference only to an apportionment of the loss as between different policies on the same vessel, and had no reference to the liability of the different subscribers to the assured for the amount apportionable to this policy; (2) that this policy under the rider clause was accountable for one-fourth of the whole loss; (3) that in the absence of anything in the policy modifying the common law rule, the assured was entitled to call upon any of the subscribers to pay the stipulated amount of his legal liability, viz., one-thirtieth of $1,000, until the loss apportionable to this policy was satisfied; and that any of the subscribers paying more than their share, as between themselves, must look to their associates for contribution.

Brown, District Judge. On the 19th of March, 1895, the libellants took out a policy of marine insurance from the incorporated association known as "The South and North American Lloyds," for $1,000, upon the steam lighter Agnes, valued at $4,000, for the term of one year from March 10, 1895. The association consisted of thirty individuals and firms, whose subscriptions were in print at the end of the policy; and along the margin of the subscriptions was printed, "Each subscriber liable for one-thirtieth of $1,000," the figures $1,000 being inserted in writing. Below the names of the subscribers was the written signature, "Whipple & Co., Attorneys." In the body of the policy was the following printed clause, among others:

"And the said firms, corporations and individuals * * do bind themselves severally and not jointly, nor anyone for the other, to the assured * * * for the true performance of the premises, each one for his own part of the whole amount herein assured."

Two other policies on the Agnes were also taken out by the libellants, one in the New York and Chicago Lloyds for $1,000, and one in the East River Mutual Insurance Company for $2,000. The Agnes was subsequently injured within the risks insured against to the admitted amount of $1,015.53. The libellants settled with the East River Mutual Company for the sum of $507.76, i. e., one-half of the loss. The above libel was filed against fifteen of the subscribers to the first named policy; only six of them could be served with process, or have appeared. It is admitted that the liability of each of the defendants does not exceed one-thirtieth of $1,000, that is, $33.33. The question presented for decision is whether the libellants are entitled to recover against each of these six up to the limit of their liability under the policy, viz., $33.33 against each, or only $8.46 against each, i. e., one-thirtieth of $253.88, the one-fourth of the whole loss.

By the common law of this country, and of England, where different policies of insurance are taken out on the same property, the insured, in case of loss, and in the absence of any contrary stipulations in the policy, is entitled to sue at law any of the insurers under either policy, at his election, and to recover his whole loss up to the amount insured. Either insurer, after paying the loss, is entitled to recover from any other insurers their pro rata upon the policies. Per Lord Mansfield, in Newsby v. Reed, 1 W. Bl. 416; Story, J., in Potter v. Insurance Co., 2 Mason, 475, Fed. Cas. No. 11,332; Insurance Co. v. Griswold, 14 Wend. 462; Lucas v. Insurance Co., 6 Cow. 637.

In some other countries it is provided that a subsequently dated policy is liable only for any deficiency not covered by prior insurance. In America, for the purpose of adopting the latter rule, a clause known as the "American clause" was early introduced into the body of the policy, providing against any right of contribution in favor of a prior insurer as against a subsequent insurer. See Insurance Co. v. Griswold, 14 Wend. 399; 1 Pars. Mar. Ins., 292. Where no such clause, however, was introduced into the policies, the English rule prevailed. Thurston v. Koch, 4 Dall., 348. Fed. Cas. No. 14,016.

There is but one written signature, viz., by the attorney of all. There is but one policy; one issue; and one date, viz., the 18th of March, 1895. The rider clause, therefore, cannot refer to the associates under this policy, but only to different policies. Its meaning is the same as if it read: "All insurance policies covering the property insured shall contribute for their respective amounts without regard to the dates of the different policies." The intent is that as between different policies the "American clause' shall not apply, but on the contrary each policy shall pay its proportionate amount only. Had the intention been to limit the recovery that might be had from either of the subscribers under this policy standing alone

and by itself, the word "subscribers" would have been used as in other places in the policy; and the words "without regard to dates" would not have been used at all.

As regards the manner, however, in which the libellant may collect this $253.88 from the 30 subscribers to this policy, there is nothing in the policy, or in the rider that modifies the common law right of the insured to prosecute all or any of the several individual obligors, and recover against each up to the limit of his stipulated legal liability, so far as necessary to make good the loss apportioned to this policy as a whole. The right of the assured to recover in this manner arises from the very nature of the engagement, by which each individual under this policy has expressly stipulated that he is "liable for one-thirtieth of $1,000"; and as each one has thus made himself legally liable for that amount, all or any of them are liable to be called upon to pay that amount until the claim under the policy is satisfied. As between the subscribers themselves, it is for those who pay more than others to resort to them for proportionate indemnity, which they are entitled to do both under the express clause of subrogation which the body of this policy contains, as well as by the equitable right which the law would recognize even without that clause. Such a course is also more compatible with justice; for in an action for contribution brought by those who have paid, all the others may be joined as defendants in one action; and in the case of the insolvency of some, the deficiency would be equitably distributed among the solvent defendants so long as the limit of their liability was not exceeded; whereas, if the contrary rule were applied, the insured could have no such equitable relief, and must wholly lose whatever he should be unable to collect of any one of the subscribers. Plainly the common law rule, as established by Lord Mansfield, is equitable in both directions.

Decree for the libellant against each defendant for $33.33, with interest and costs.

Mr. Cramp, the shipbuilder, claims that the chemist employed by him has discovered that cornstalks could be made worth $2 a ton. or $5 an acre, by mechanism which would extract from them alcohol, cellulose, a material for mattings, carpets, paper, smokeless powder, and cattle food, superior to any other.—American Elevator and Grain Trade.

NOTES.

From Erie, Pa., the official reports of shipments during last season give 492,536 tons of anthracite and 179,640 tons of bituminous coal, aggregating 672,176 net tons in all.

On Jan. 30, Major Sears of the United States engineer corps will open bids at Duluth for repairs to the easterly breakwater at Agate Bay, Two Harbors. It was damaged in storms last year. About 250 feet is to be strengthened and repaired, new timber being placed in and the estimates call for ten cords of stone filling and cords of rip rap. The cost will run to about $4,000 or $5,000. The westerly breakwater is also to be repaired.

R. J. Williams & Co., of Richmond, Va., shipped ten car loads of roofing slate to Liverpool, England, last month to be used in covering the government's new post-office building, which will be one of the finest in that great city. The slate is taken to Newport News by rail and then shipped to Liverpool by the Chesapeake and Ohio Steamship Line. E. R. Williams, of this firm, visited Liverpool last summer and placed the order. The samples of slate, it is stated, were passed upon by an expert engineer.

When the Cramps on the Delaware, and the Union Iron Works, San Francisco, lay the keels of the two Japanese cruisers they have contracted to build, there will be $20,000,000 worth of naval work on the stocks in American ship-yards. Of the total the great southern works at Newport News will have $7,655,000 worth. These cost figures do not include armor plating or batteries, but are for hull and machinery only. The outlook is for a decided increase in this line of work in our ship-yards, and it will decidedly improve the market for iron and steel.

A dispatch from New York city announces that the Joint Traffic Association has decided upon a reduction in the grain rate from Chicago to New York of 5 cents per 100 pounds, or 20 cents to 15 cents. This action has been found necessary to check a rapid and very important diversion of grain to southern coast ports. As the movement of flour eastward has been sluggish for some time a reduction in that class of freight suggests itself as a means of emptying some of the large freight sheds at upper lake ports.

Jos. Dixon Crucible Company, Jersey City. N. J., manufacturers of Dixon's unexcelled Silica graphite paint, have issued their new catalogue, together with a 20-page pamphlet of testimonials. This well-known paint is especially adapted for smokestacks, outdoor metal and woodwork, boiler fronts, roofs, etc., as it withstands the fumes of all acids and greases of any kind. The fact that it has an unequaled record of upwards of twenty-five years is in itself a most valuable recommendation, which, together with the many flattering letters received from railroad managers, mine superintendents and others, place this paint in the front rank for an outdoor coating for sheet metal roofs, bridges and other structural work.

NOTICE.

Capt. Fish, who sailed the schooner Riverside for the past two seasons, will find it to his interest to communicate with W. W. Kunkle, Ashtabula, O.—Adv.

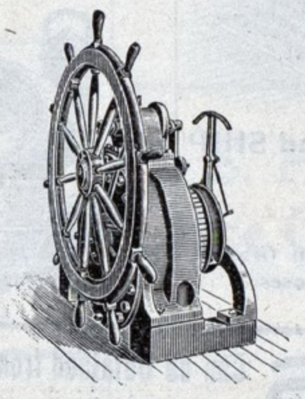
FOR SALE.

Tow barge, F. J. Bronson, capacity 375 M feet lumber. For particulars call on or address, J. L. Higgie, Jr., No. 1, S. Franklin St., Chicago. 3-tf.

WANTED.

An 18 or 20-inch double engine, or 24x26 H. P. engine in exchange for a 20-inch-36-inch by 30-inch Stuper compound engine. Dry Dock Iron Works, Port Huron, Mich. tf.

Queen City Hydraulic Steerer.



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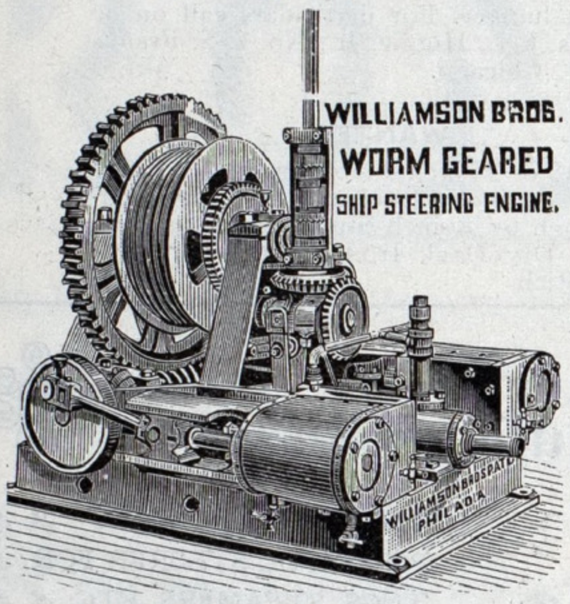

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Heavy Castings a Specialty. Prices Quoted on Application.

Fore and Aft Compound Marine Engines.

The Engines in the following boats are of our manufacture.

Tug, Hunter, Chicago, 15 and 28x22.
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Passenger Steamer Pilgrim, St. Clair, 14 and 28x20.
Steam Barge Iona, Grand Haven, 24 and 46x42.
Steam Barge M. T. Greene, Chicago, 20 and 36x36.
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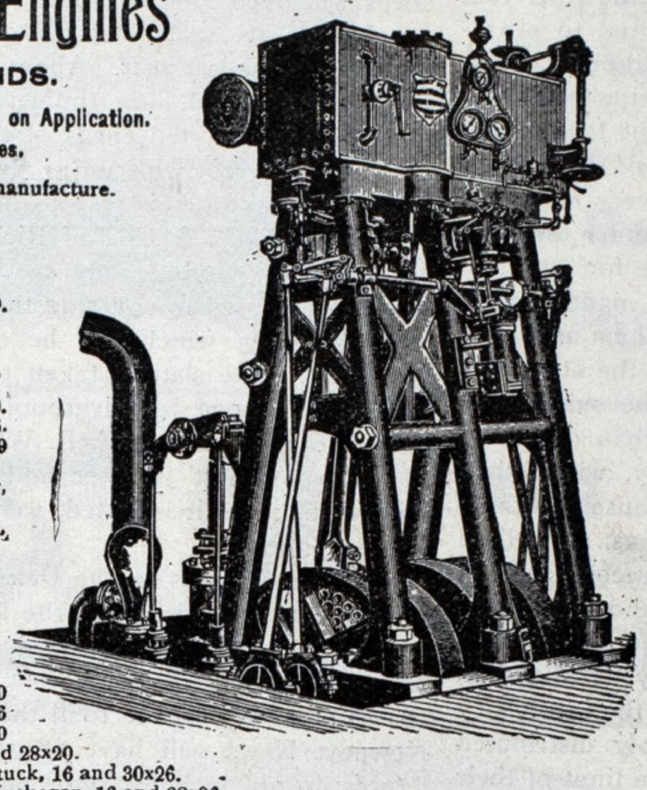
Steam Barge Mark B. Covell, Manistee, 18 and 30x26.
Steam Barge Isabella J. Boyce, Michigan City, 19 and 32x26.
Steam Barge Luella H. Worthington, Cedar River, 19 and 36x30.
Passenger Steamer City of Kalamazoo, South Haven, 20 and 40x30.
Steamer Oval Agitator, Chicago, 14 and 28x20.
Tug E. G. Crosby, Muskegon, 16 and 30x24.
Tug Peter Coates, Sault Ste. Marie, 10 and 20x16.
Steamer Lorain L, South Haven, 12 and 21x16.
Passenger Steamer Lotus, Escanaba, 16 and 30x24.
Steam Barge Sachem, Grand Haven, 21 and 38x36.
Passenger Steamer Bon Ami, Saugatuck, 14 and 28x20
Steam Barge Charles A. Street, Chicago, 20 and 36x36
Steam Barge Edward Buckley, Manistee, 18 and 36x30
Passenger Steamer E. G. Maxwell, Pentwater, 14 and 28x20.
Passenger and Freight Steamer Bon Voyage, Saugatuck, 16 and 30x26.
Passenger and Freight Steamer Mabel Bradshaw, Muskegon, 16 and 28x26.



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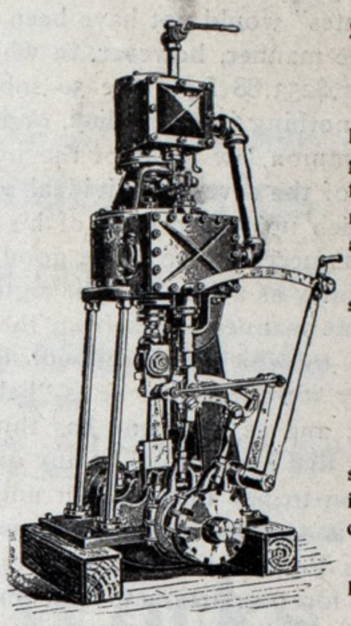

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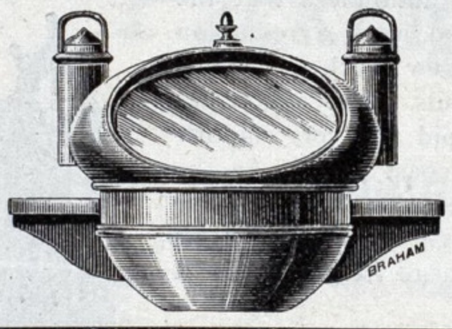

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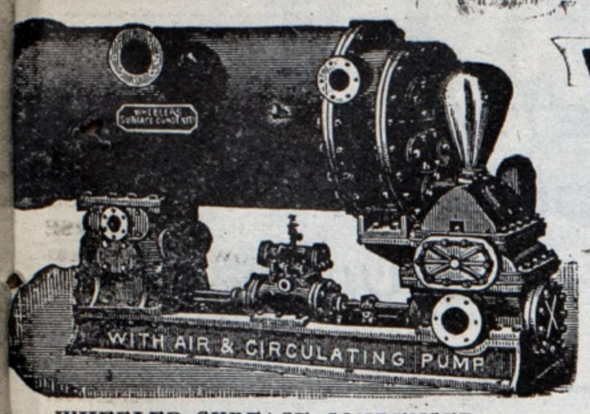

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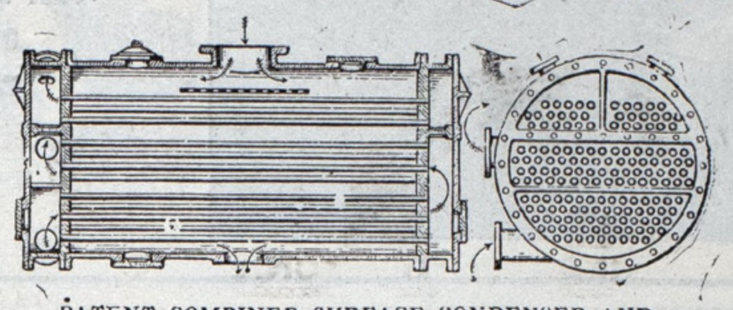

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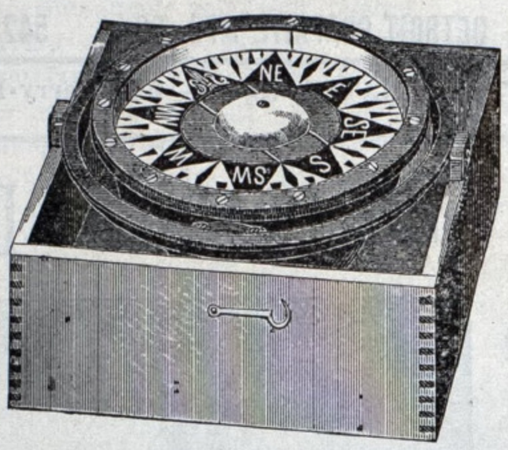

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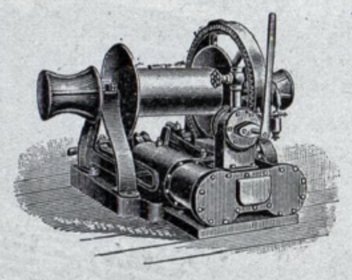

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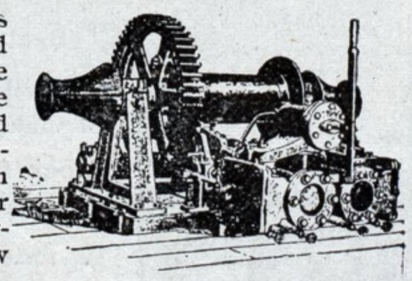

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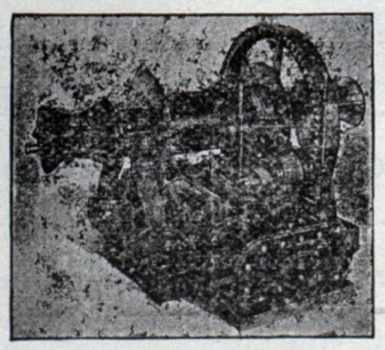

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For all purposes.

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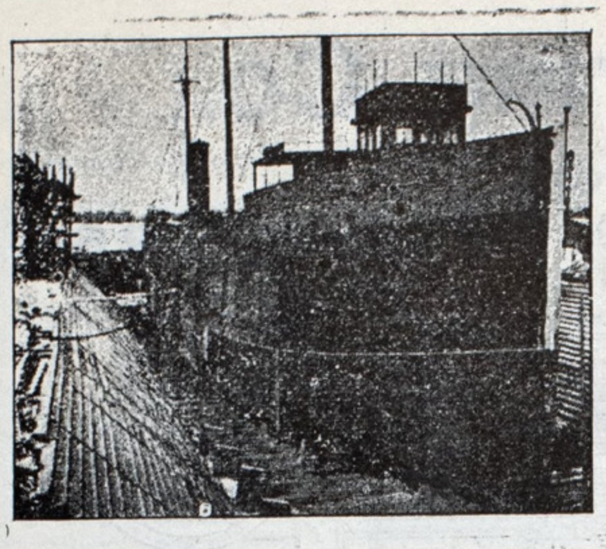

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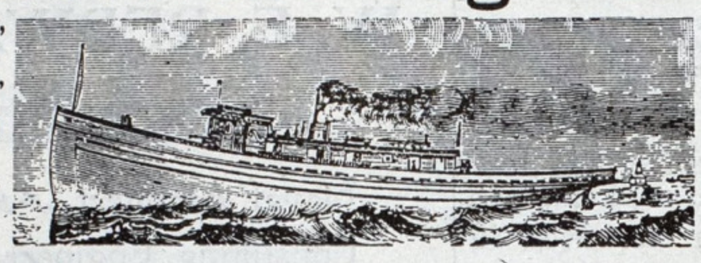

Steamers when outside wanting our Tugs, blow one long whistle and as many short ones as they want tugs.

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PHOTOGRAPH OF 300 FT. BOAT IN DOCK.

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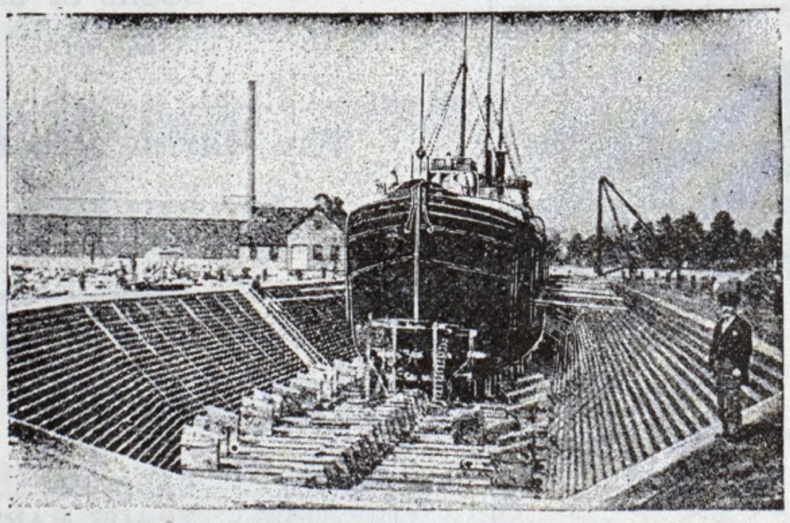

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Length, Extreme	537 feet.	Entrance, Top,	55 feet 9 in.
Breadth, Top,	90 " 4 in.	Entrance, Bottom	50 "
Breadth, Bottom	52 "	Depth over Sills	18 "

LARGEST DRY DOCK ON THE LAKES.

PRICES FOR REPAIRS AND DOCKING SAME AS AT LOWER LAKE PORTS. SUPERIOR, WIS.

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EAST SIDE, NEAR IRONVILLE. - - TOLEDO, O.

Dimensions of Dock, 236 feet long, 55 feet wide at top and 37 feet wide at gate. Nine feet water over sill.

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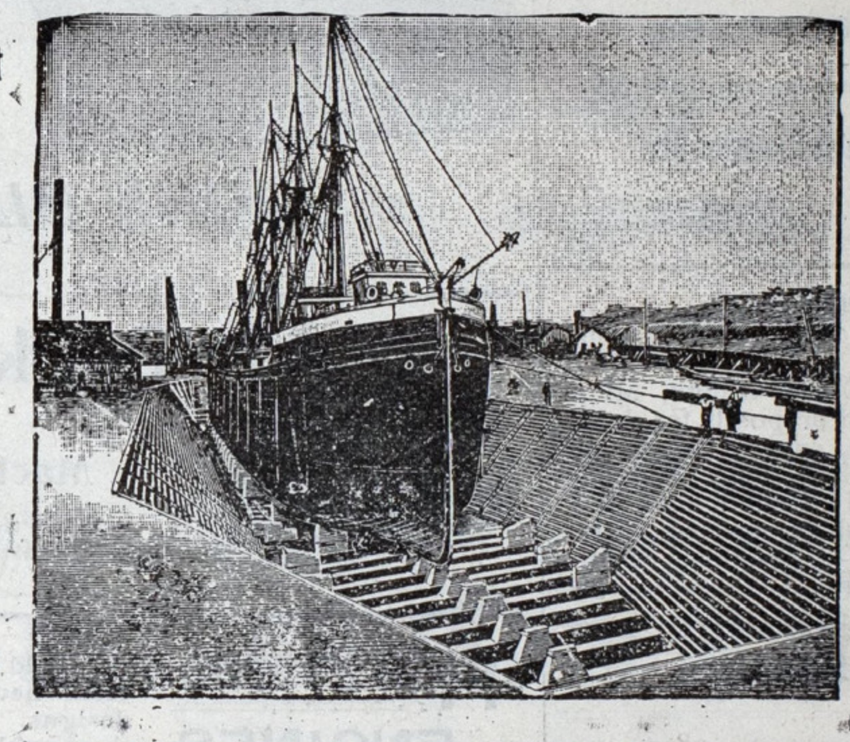

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